

**IN THE UNITED STATES PATENT & TRADEMARK OFFICE
GROUP ART UNIT 1731**

Applicant: Christopher Raymond JONES
Assignee: Rhodia Consumer Specialties Limited
Appln No: 10/542,432
Filed: January 12 2004
For: TREATING SLURRIES
Examiner: Peter F. Godenschwager

DECLARATION

Honourable Commissioner of Patent & Trade Marks,

Sir,

STEPHANIE EDMUNDS declares as follows:

1. That she is Stephanie Edmunds who is a research scientist and who works in the field of water treatment.
2. That the experimental work reported in the attached Annex A was carried out by her to support the patentability of the invention described in US 10/542,432.

The undersigned hereby declares that all statements made herein of her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made in the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of

Title 18 of the United States Code, and that such wilful false statements may jeopardise the validity of the application or any patent issued thereon.

Signed S. Edmunds

Date 8th December 2010

Stephanie EDMUNDS

Annex A - Experimental Work

Method

A batch of commercially available calcium carbonate slurry was obtained.

Approximately 0.5mls of the slurry was mixed with a few drops of each of four THPS formulations. A further sample had no formulation added (control).

The formulations were:

- 1: No formulation (control)
2. THPS
3. THPS + Dispersant A (Acetodiphosphonic Acid)
4. THPS+ Dispersant B (Poly sodium 4 styrene sulphonate)
5. THPS+ Dispersant C (sodium salt of nitrilo-tris(methylene phosphonate))

Each of the five samples was dropped onto a piece of coloured card.

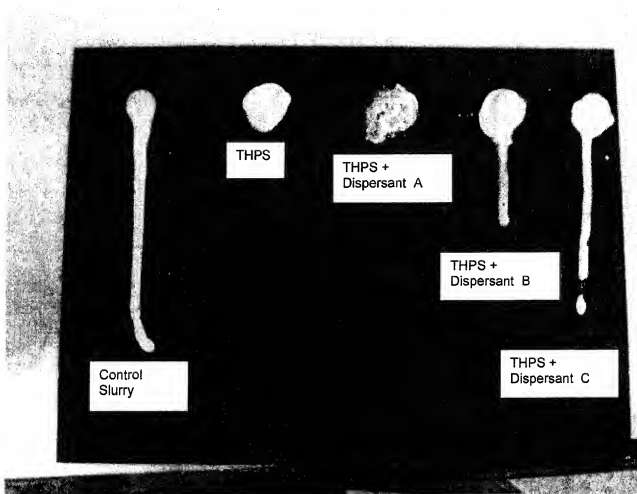
The card was then held in the vertical position to allow the calcium carbonate samples to flow. The card was then photographed to show the effect of the formulations.

Results

- The slurry with no formulation added was homogeneous and flowed well.
- The slurry with THPS added became flocculated, with a lack of homogeneity, indicated by the inability of the calcium carbonate slurry to flow.
- The slurry with THPS plus Dispersant A (Acetodiphosphonic Acid) became severely flocculated, with a lack of homogeneity, indicated by the inability of the calcium carbonate slurry to flow.
- The slurry with THPS plus Dispersant B (Poly sodium 4 styrene sulphonate) became flocculated, with a lack of homogeneity, indicated by the inability of the calcium carbonate slurry to flow.

- The slurry with THPS plus Dispersant C (sodium salt of nitrilo-tris(methylene phosphonate)) was homogeneous and flowed well.

The photograph below shows the impact of the various THPS formulations on the integrity and homogeneity of the calcium carbonate slurry.



Conclusion

The sodium salt of nitrilo-tris(methylene phosphonate)) acts to counter the flocculating effect of THPS on the calcium carbonate slurry.

The two other known dispersants tested did not allow the calcium carbonate slurry to remain homogeneous in the presence of THPS.